

revealed that insect outbreaks pose a greater threat to such forests than fire does.

William Baker and Mark Williams at the University of Wyoming in Laramie studied records of fires and insect outbreaks in dry forests in the western United States from 1999 to 2012, and found that insects caused the loss of 5.6 times more forest area than did wildfires. The team also analysed land surveys from the late nineteenth century and found that small trees — of about 40 centimetres or less in diameter — made up almost 62% of total trees, a higher proportion than was thought.

The findings suggest that, historically, forests were resilient because of the smaller trees, and that removing these to control fire risk could be misguided.

Front. Ecol. Evol. <http://doi.org/zfj> (2015)

NEUROSCIENCE

How baby rodents block pain

Nerve injury in very young animals does not result in pain as it does later in life, probably because of an anti-inflammatory response in the spinal cord.

Maria Fitzgerald of University College London and her colleagues damaged hind-limb nerves in rat and mouse pups. They tested the sensitivity of the paws to painful stimuli, such as mechanical pressure, then recorded the excitability of spinal neurons at different ages and analysed immune profiles. They found that both pain sensitivity and neural excitability developed in the pups at an age equivalent to human adolescence, when anti-inflammatory molecules were replaced by those that promote inflammation.

The team reversed this pain suppression in injured young rats by blocking production of IL-10, an anti-inflammatory cytokine. The results could explain why such 'neuropathic' pain sometimes emerges

mysteriously in human adolescents, the authors say. *J. Neurosci.* 35, 457–466 (2015)

GLACIOLOGY

Antarctic ice melt may speed up

Antarctica's vast ice sheets may be more vulnerable to warming than was thought.

Using a three-dimensional computer model, David Pollard of Pennsylvania State University in University Park and his colleagues identified two new ways in which ice sheets can collapse. Meltwater and rainfall can drain into crevasses in the ice, leading to vertical fractures. Moreover, heavy ice near the top of the sheets can break apart, shearing off huge chunks.

The results may help to explain how the East Antarctic Ice Sheet could have collapsed enough to cause the high sea levels that occurred during warm periods over the past 25 million years. Accounting for these mechanisms, the authors suggest that the West Antarctic Ice Sheet could collapse faster than predicted — over decades rather than centuries to millennia.

Earth Planet. Sci. Lett. 412, 112–121 (2015)

MICROBIOLOGY

Tuberculosis has history in its DNA

Key historical events such as the First World War drove the global spread of a strain of tuberculosis-causing bacteria that is prone to becoming resistant to drugs.

Thierry Wirth of the National Museum of Natural History in Paris and his colleagues collected 4,987 samples of the Beijing strain of *Mycobacterium tuberculosis*, isolated from patients from 99 countries, and analysed the microbe's DNA to trace its ancestry. They found that the strain originated in East Asia 6,600 years ago with the rise of agriculture. From there, it spread throughout the

SOCIAL SELECTION

Popular articles on social media

Ranking universities by happiness

Universities are often ranked using metrics for research income and academic impact, but scores such as those published by *Times Higher Education* do not say much about the quality of life of researchers at those institutions. A blog post (go.nature.com/4bxozj) by structural biologist Jenny Martin that calls for new researcher-friendly metrics for ranking universities — including a happiness index — is drawing enthusiastic reviews on social media. "I am so going to work on increasing our Happiness-index in the group!" tweeted Jodie Bradby, a physicist at the Australian National University in Canberra. The proposal was "a new spin on

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academic metrics... that I can get behind", said Stephanie Januchowski-Hartley, a conservation scientist at Texas A&M University in Corpus Christi, also on Twitter.



world, increasing in prevalence when the human population grew in the nineteenth century, as well as when people were vulnerable to infection during the First World War and after HIV began to spread as epidemics. The drug-resistant strains that now affect Asia appeared when the Soviet Union — and its health system — collapsed in the 1990s.

Nature Genetics <http://dx.doi.org/10.1038/ng.3195> (2015)

ECOLOGY

Gold-rush threat to tropical forests

Deforestation due to gold mining is increasing in South America, particularly around biodiversity hotspots.

Gold mining has become more feasible in remote tropical forests owing to the drastic rise in demand and price for the metal over the

past decade. To study its impact, Nora Alvarez-Berrios and Mitchell Aide at the University of Puerto Rico-Río Piedras in San Juan analysed satellite images of tropical forests in South America from 2001 to 2013. They found that roughly 1,700 square kilometres of forest had been cleared (**pictured**) and only 250 km² was regenerated in and around gold-mining sites.

Although forest loss from gold mining is small compared with that from agriculture, for instance, it is accelerating — unlike deforestation as a result of other land-use changes. Moreover, nearly one-third of the losses are occurring within 10 km of protected areas.

Environ. Res. Lett. 10, 014006 (2015)

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